



55 WORKING PAPER

# Financialization, price risks, and global commodity chains: Distributional implications on cotton sectors in Sub-Saharan Africa

Vienna, August 2015

Cornelia Staritz, Austrian Foundation for Development Research (ÖFSE)  
Susan Newman, University of the West of England & University of Johannesburg  
Bernhard Tröster, Austrian Foundation for Development Research (ÖFSE)  
Leonhard Plank, Vienna University of Technology

## Acknowledgements

We thank all interview partners in Burkina Faso, Mozambique and Tanzania and the regional offices of the Austrian Development Agency (ADA) in Burkina Faso and Mozambique for support during the fieldwork. We further thank Jakob Engel for comments on an earlier version of the paper. Financial support from the Jubiläumsfonds of the Oesterreichische Nationalbank (project number 14686) is gratefully acknowledged. Additional funding for fieldwork conducted in Tanzania in 2007 was gratefully received from the Swiss National Foundation (NCCR-Trade Regulation Project) and the University of London (Central Research Fund). The views expressed are those of the authors.

The ÖFSE Working Paper Series has the objectives to publish original research and initiate debates on international development issues and policies. Authors include ÖFSE employees as well as external researchers. The views expressed in the working papers are those of the authors and do not necessarily reflect the views of ÖFSE. For interest in publishing an ÖFSE Working Paper please contact [c.staritz@oefse.at](mailto:c.staritz@oefse.at)

### Download:

[http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP55\\_Financialization.pdf](http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP55_Financialization.pdf)

## IMPRINT

Austrian Foundation for Development Research – ÖFSE  
A Austria, 1090 Vienna, Sensengasse 3, T +43 1 3174010, F -150  
E [office@oefse.at](mailto:office@oefse.at), I [www.oefse.at](http://www.oefse.at), [www.centrum3.at](http://www.centrum3.at)

WITH FUNDING FROM  
 AUSTRIAN  
DEVELOPMENT  
COOPERATION

## Contents

Index of Tables & Figures.....	3
List of Abbreviations .....	3
Abstract .....	4
1. Introduction .....	5
2. Financialization of Commodity Markets and Global Commodity Chains.....	7
3. Financialization and Cotton Markets .....	8
4. National Market Structures and Transmission of Prices and Risks.....	13
4.1. National market structures in Burkina Faso, Mozambique and Tanzania .....	13
4.2. Inter- and intra-seasonal price volatility .....	16
4.3. Who bears price risks and how are they managed? .....	19
5. Conclusion .....	21
References .....	23
Authors .....	27

## Index of Tables and Figures

Table 1:	Price setting in Burkina Faso, Mozambique and Tanzania .....	16
Figure 1:	Open positions (left axes) and share of financial investors (right axes) in ICE cotton futures and options .....	9
Figure 2:	Schematic of global cotton chains .....	12
Figure 3:	Cotlook A-index, export prices and producer prices (cotton lint price, US\$/tonne) .....	17
Figure 4:	Timing of producer price setting in Burkina Faso, Mozambique and Tanzania .....	18
Figure 5:	Intra-seasonal price risk and PRM ability for farmers and cotton companies.....	21

## List of Abbreviations

AAM	Mozambique Cotton Association
ADA	Austrian Development Agency
APROCOB	Trade Association of Cotton Companies of Burkina Faso
ESA	East and Southern Africa
FONPA	National Forum of Cotton Producers
GDP	Gross Domestic Product
GPs	producer groups
ICAs	International Commodity Agreements
ICE	Intercontinental Exchange
LICs	low income countries
PRM	price risk management
PTBF	price to be fixed
SSA	Sub-Saharan Africa
TACOGA	associations of cotton farmers
TCA	associations of cotton buyers
TCB	Tanzania Cotton Board
TCMB	Tanzania Cotton Marketing Board
UNPCB	Union Nationale des Producteurs de Coton du Burkina Faso
WCA	West and Central Africa

## Abstract

The functioning of commodity markets has changed related to processes of financialization that involve two major developments – the rise of financial interest on commodity derivative markets through the increasing presence of financial investors and the changing business models of international commodity trading houses and the increasing importance of these markets in price setting and risk management since the liberalization of national commodity sectors. A critical question is how these global financialization processes affect commodity producers in low income countries via the operational dynamics of global commodity chains and distinct national market structures. This paper investigates how global financialization processes influence how prices are set and transmitted and how risks are distributed and managed in the cotton sectors in Burkina Faso, Mozambique and Tanzania. It concludes that uneven exposure to price instability and access to price risk management have important distributional implications. Whilst international traders have the capacity to deal with price risks through hedging in addition to expanding their profit possibilities through financial activities on commodity derivative markets, local actors in producer countries face the challenge of price instability and increased short-termism – albeit to different extents deepening on local market structures – with limited access to risk management.

**Keywords:** commodity markets, financialization, global commodity chains, commodity prices, price risks, price risk management, cotton sector, Africa

# 1. Introduction

The unprecedented commodity price rise and heightened volatility since 2003 has reignited academic and political discussions on the drivers of commodity prices and their consequences for commodity dependent developing countries. Persistently rising commodity prices appeared to some as a reversal of the Prebisch-Singer thesis and a shift in development thinking on the relationship between commodity dependence and economic growth and development. Some questioned whether “commodities are still in crisis” (Sapsford et al. 2010), echoing the seminal work of Alfred Maizels (1992). Related to this, scholars and policy makers have promoted the notion of resource based industrialisation via upgrading along global value chains (Morris et al. 2012; UNECA 2013).

But, it is not only commodity price dynamics, in and of themselves, but also broader changes in the functioning of commodity markets that have had crucial impacts on commodity producers in low income countries (LICs). These changes can be understood as part of the process of financialization as a central process in contemporary capitalism (Fine 2010; Lapavistas 2014; Van der Zwan 2014). Financialization is frequently defined as ‘the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies’ (Epstein 2005, 3). In the case of international commodity markets, financialization has occurred via the increasing interaction, or symbiosis, between financial and physical markets for commodities. Both the financialization of households and firms, driven by a process of withdrawal of the state from provisions for health, social security and old age, and the falling rate of profit in industry, respectively, have promoted financial investment in general and the rise of commodities as an asset class in portfolio investment in particular (Domanski/Heath 2007).

Connected to the rise of financial interest on international commodity derivative markets are at least two major developments in the structure and functioning of international commodity markets. First, the increasing importance of international commodity exchanges, i.e. commodity futures markets, in price setting and risk management since the collapse of the International Commodity Agreements (ICAs) and the liberalization of national commodity sectors. And second, a shift in the business models of international commodity trading houses towards financial motives and activities, reflected in the restructuring of commodity trading companies to place “risk management” at the centre of their core competencies, namely in-house research departments and futures brokerages that cater to traders of physical commodities as well as financial investors looking to diversify their portfolios. Commodity trading houses thus play the dual role of physical commodity trader and financial investor on commodity exchanges (Newman 2009).

A critical question, that this paper seeks to investigate, is how processes of financialization affect commodity producers in LICs via the operational dynamics of global commodity chains and their distributional outcomes. While there is now a large, often quantitative, literature on the implications of financialization on commodity prices with contradictory results (for an overview see UNCTAD 2011; Ederer et al. 2013), there is limited analysis of how financialization dynamics impact along particular commodity chains. This is related to the division of literature on financial markets and the financial dimension of price transmission at the international level on the one side and on commodity chains analysing impacts on producers on the other side (Bargawi/Newman 2013; Clapp/Helleiner 2012). Commodity chain research, together with global value chain and global production network research, has analysed the organisation and governance of international trade and global production and how this affects the development prospects of producers, firms, regions and countries. However, research has largely neglected the role of finance and financial markets, and in particular financialization, in shaping the structure and functioning of commodity chains and the out-

comes for different actors along chains (see below for notable exceptions). In light of this analytical gap, particularly scholars working in the global production network tradition have begun to incorporate issues of financialization into their frameworks (Coe et al 2014; Yeung/Coe 2015). This paper contributes to this burgeoning debate focusing on the cotton sector in Sub-Saharan Africa (SSA).

Although world cotton production is dominated by the US and China (the largest producer), the sector plays an important role in LICs in SSA as a major source of foreign exchange earnings and important contributor to GDP (gross domestic product). Along with coffee, cotton is the most important export cash crop (followed by sugar, oil seeds, nuts, tea and spices), and accounted for 10.5 per cent of total SSA agricultural exports in 2013. More importantly, cotton production generates income for millions of small holder farmers and rural households. There are, however, fundamental differences in the relative economic importance of cotton production with cotton enjoying an economic importance in West and Central Africa (WCA) far exceeding that in East and Southern Africa (ESA) (Gibbon 2001). This is also seen in the three countries studied in this paper where cotton accounts for 17.7 per cent of exports in Burkina Faso, 2.5 per cent in Mozambique and 2.3 per cent in Tanzania in 2013. The sector provides the most important source of livelihoods to around 350,000 farmers in Burkina Faso, 250,000 in Mozambique and 425,000 in Tanzania, and many more indirectly.

This paper investigates the question of how financialization affects the institutional context of price setting and hence how prices are “set” in the process of international cotton trade where global price benchmarks, those arising on commodity derivative markets in particular, have become increasingly influential. We are particularly interested in the distributional implications of these changes in price “setting” in SSA cotton exporters that work through interactions between prices, price risks and price risk management (PRM) strategies. International commodity trading houses have a crucial role in this process as lead firms in cotton commodity chains. Newman (2009) showed how the trading practices of international traders on coffee markets critically influence how financialization dynamics impact upon local exporters and producers – through the price benchmarks and the types of contracts they use, and the way they deal with price risks and expand their core activities and profit possibilities.

Global financialization dynamics and institutional contexts and lead firm strategies interact with local contexts, i.e. national market structures, which influence the way in which prices, instability and risks and opportunities to pursue PRM are transferred along cotton commodity chains to producers. The three country case studies analysed in this paper owe to these differences in their national market structures and the level of state involvement in cotton production and marketing. Burkina Faso, Mozambique and Tanzania have pursued different reform agendas since the 1990s and these differences have conditioned the way in which global financialization dynamics play out in each of the national systems.

The paper is based on trade, industry and financial data, interviews with international commodity traders, financial investors and cotton associations, and fieldwork in Burkina Faso (September 2014) and Mozambique (November 2014). During fieldwork, semi-structured interviews were conducted with ginners, ginners’ associations, farmers’ organizations, relevant government institutions, and sector experts.<sup>1</sup> For Tanzania fieldwork was conducted in 2007 interviewing diverse actors in the sector with selected additional telephone interviews conducted with ginners in early 2015.

---

<sup>1</sup> In Burkina Faso and Mozambique, we conducted interviews with seven ginners, two spinners, two input providers, farmers’ unions and ginners’ associations. We also interviewed representatives of the Ministries of Trade and Agriculture and of international institutions, and local researchers and experts.

## 2. Financialization of Commodity Markets and Global Commodity Chains

In its broadest sense, financialization describes the increasing role and dominance of financial motives, activities and profits for non-financial corporations and in the economy and society more widely (Epstein 2005). Recent research has focused on the magnitude of financial activities as sources of profit in the economy and on new opportunities for the expropriation of profits by different types of actors (Newman 2009). Financialization has affected most sectors of the economy including commodity markets.

International commodity markets have become financialized in at least two major respects: The first involves the increasing importance of financial markets for firms' decision making around the allocation of resources. The seminal work of Lazonick and O'Sullivan (2000) has inspired a large body of recent work on the financialization of the non-financial corporation. Lazonick and O'Sullivan elucidated the shift from 'old economy' or 'productionist' business models, based upon a strategy of 'retain and reinvest', to a 'new economy' model with firms' voracious pursuit of profit increasingly delinked from investment in production. Rather, strategies to increase share prices through firm restructuring along the lines of 'downsize and distribute', engagement in share buy-backs and short-term investment in financial markets have dominated. In the context of commodity markets, derivatives markets have served as a lucrative site for financialized accumulation for international commodity trading houses since the collapse of the ICAs and the liberalisation of national commodity marketing structures. There is considerable variation but several large international traders have their own financial services units or hedge funds, investing on their own account, managing third party money, and selling investment products. Such traders have become "financialized" and increasingly resemble financial holding companies dealing with a wide spectrum of financial services and investments. While the proportion of company revenues coming from such financial activities has remained relatively small and variable, they have grown with respect to revenues derived directly from the trading of physical commodities (Newman 2009).<sup>2</sup>

Second, and connected to the first, is the increase in activity on international commodity exchanges driven purely by financial interests. Initially, commodity derivative markets were developed primarily to allow the management of risks for physical commodity traders but they have increasingly become dominated by traders outside physical commodity markets, particularly financial investors. Speculators have always played a role in these markets taking opposite positions to physical hedgers but they were largely specialized in the trading of few commodities. Financial investors, in contrast, trade in a large range of commodities as an asset class in order to derive profits from price changes – similar to stocks, bonds and real estate assets (Nissanke 2011; UNCTAD 2011). The 1990s saw an increase in hedge funds active on commodity exchanges as barriers were lowered with the transition from open outcry to electronic trading platforms. More recently, and connected to the withdrawal of the state in provisions for old age and social security, large institutional investors, pension funds in particular, have flooded commodity derivatives markets. Further, investment banks have increasingly offered diverse products for commodity derivative market investments to allow their clients to profit from commodity price developments, in addition to trading on their own account. This has increased in particular after the dot-com crises and in the context of the global economic crisis as investors searched for new investment opportunities.

These changes have had a profound impact upon the relationship between financial and physical markets for commodities, in particular via the growing centrality of derivatives mar-

---

<sup>2</sup> Gibbon (2014) underlines that although financial activities' contribution to revenues may be small, their potential contribution to profits can be much higher with shares up to 25 per cent between 2004 and 2008.



kets for risk management and price setting on physical markets. This increasing interaction between financial and physical commodity markets has also implications for the organisation and functioning of commodity chains and the development prospects of producers, firms, regions and countries as they are differentially integrated along these chains.

Global commodity chain research – and global value chain and global production network research more broadly – has analysed the organisation and governance of international trade and global production. The focus has been on the organisational and geographical distribution of activities, costs and rewards along chains, highlighting the asymmetric power structure among actors and the prospects and limits for economic and more recently social upgrading (e.g. Gereffi 1994, 1995; Gereffi et al. 2001; Kaplinsky/Morris 2001; Henderson et al. 2002; Gibbon/Ponte 2005; Barrientos et al. 2010). Save for a few notable exceptions (i.e. Gibbon 2002; Palpacuer et al. 2005; Palpacuer 2008; Milberg 2008; Milberg/Winkler 2010; Baud/Durand 2012; Coe et al. 2014; Morgan 2014; Yeung/Coe 2015; Fernandez 2015; and specifically for commodity markets Newman 2009; Bargawi/Newman 2013; Clapp 2014), research to date has largely neglected the role of finance and financial markets, and in particular financialization, in shaping the structure and functioning of commodity chains and the outcomes for different chain actors.

At the same time, the explosion of empirical research on financialization since the global economic crisis has tended to be conducted at the level of the nation state (utilising methods such as flow-of-funds analysis) or the non-financial corporation (analysis of firms' balance sheets) or focused upon the operations of the financial sector itself. Analysis has often missed the integrated nature of financialization processes across national boundaries as financialized business strategies in one firm, sector or nation state impact through economic relationships across national boundaries under a system of globalized production.

How the processes of financialization are played out along commodity chains depends critically on the horizontal and vertical market structure at each node of the chain and the institutional and regulatory context in which commodity chains are embedded. In this paper, we take a chain approach that focuses specifically on how financialized accumulation strategies of commodity trading houses have affected the nature of price formation, transmission and PRM along commodity chains as these processes are mediated by national specificities in producer countries. We trace the process of price formation from futures markets, upstream along the chain from international traders, via exporters in producer countries and the local marketing system that connects producers with exporters. In doing so, we are able to connect global processes of financialization to local outcomes in commodity producing countries and make inferences on the impact of these processes on the distribution of income and risk along commodity chains.

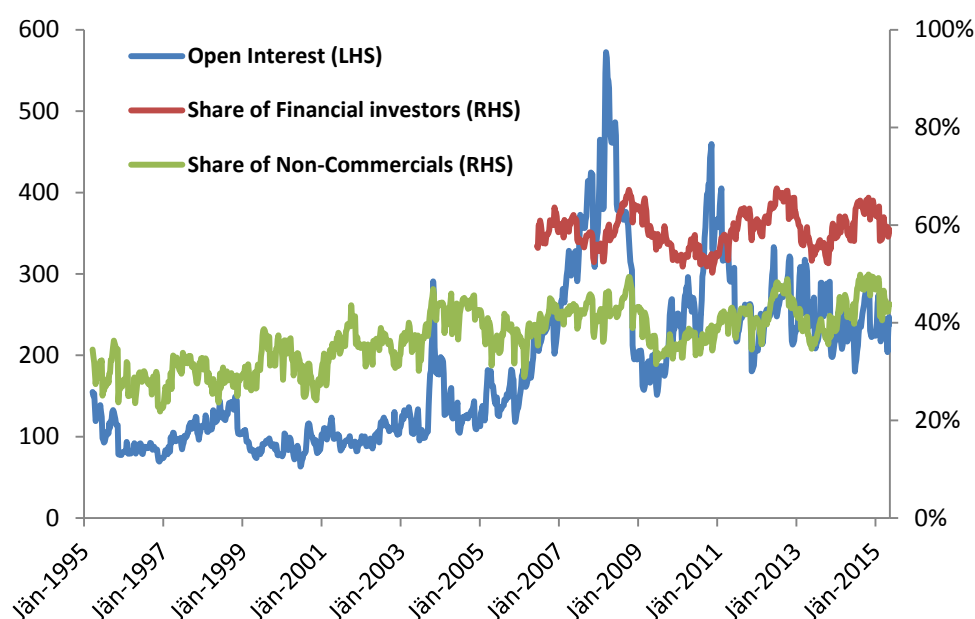
### **3. Financialization and Cotton Markets**

As in other commodity sectors, these financialization dynamics are also seen in the cotton sector, involving in particular two aspects – first, the increasing prominence of financial motives in cotton trading through the dominant role of financial investors on cotton derivative markets and the dual role of large international cotton traders as both hedger and speculator and, second, the increasing importance of commodity derivative markets in cotton price formation and PRM.

The presence of financial investors on commodity derivative markets has led to a sharp rise in trading volumes and open interest positions and to an increasing variety of investment products and strategies (Heumesser/Staritz 2013). For cotton, total open positions of futures and option contracts (long and short) have increased importantly since the early 2000s –

albeit with large fluctuations – along an increase in the share of financial investors fluctuating around 60 per cent from 2006 to 2015 (Figure 1). There is a large and controversial literature on the effects of financial investors on commodity prices<sup>3</sup> (for an overview, see Ederer et al. 2013) but less so on their impact on the structure and the functioning of commodity derivative markets. In the cotton market, trading strategies of financial investors together with electronic trading, extended trading hours and new investment products have increased speed, complexity and short-termism of derivatives trading – with intra-day volatility being a rather new phenomenon. These changes make trading more flexible and allow for immediate reactions but also demand continuous awareness of the market. Financial investors' behaviour is closely analysed by physical cotton traders and taken into account in their trading strategies as otherwise they may position themselves “against the market”. Hence, physical traders look not only at fundamentals but also try to anticipate the factors that determine financial investors' decisions. As one trader interviewed by UNCTAD (2011: 44) put it “the banks are trying to understand our markets and we try to understand their markets”.

**Figure 1: Open positions (left axes) and share of financial investors (right axes) in ICE cotton futures and options**



Source: CFTC.

Note: Until 2006 data on commercial and non-commercial traders was reported with the large share of index investors/swap dealers being part of the commercial trader category. Hence, the share of non-commercials under represents the share of financial investors. From 2006 onwards, swap dealers and money managers have been reported separately which are jointly shown in the financial investor category.

<sup>3</sup> An increasing amount of research shows that trading strategies of financial investors, in particular money managers employing trend following strategies (in contrast to swap dealers/index investors employing generally long-only and longer term trading strategies), have had a distorting effect on short term price developments and increased the amplitudes and speed of price changes. However, fundamental and speculative factors are often intertwined which makes disentangling them difficult.

But large physical traders, particularly multinational commodity trading houses have also changed their corporate strategies with an increasing focus on financial motives. There is variation and particularly traditional cotton commodity traders such as Reinhart and Plexus and smaller traders more generally have remained focused on physical trading activities. But the increased role of large multi-commodity trading companies in the cotton sector<sup>4</sup>, particularly in the context of tightened credit conditions and declining cotton demand during the global economic crisis, has led to financial trading strategies becoming more dominant alongside traditional physical commodity related hedging activities. The top three cotton traders, Louis Dreyfus, Cargill and Olam, have risk management and fund management as part of their business activities. Louis Dreyfus has an own asset management unit – called Edesia – that was formed in 2008 to develop and manage alternative investment products for a wide range of institutional clients (Louis Dreyfus 2015). In addition, the Louis Dreyfus Commodities Alpha Fund, a hedge fund with \$2.4bn. in assets under management in 2012 and the Eifel Investment Group, were part of the trading company (Gibbon 2014). Cargill has opened and reorganized at least five financial subsidiaries, some of which are involved in commodities markets (Oxfam 2011). They provide risk management and investment products for their own business units and external clients, including producers, pension funds, hedge funds and endowment communities (Vander Stichele 2012). They own Black River Asset Management – a commodity-related hedge and private equity fund with estimated assets of \$5.9 bn. in 2013, Cargill Risk Management providing various customized investment products, Cargill Trade and Structured Finance with a portfolio of \$450 mln. and CarVal Investors, an independently-managed alternative investment fund with \$10bn. in assets under management (Cargill 2015; Gibbon 2014). Olam International started the business segment “commodity financial services” in 2003 which has been operated as the subsidiary Invenio since 2010. It has three core business areas: market making and volatility trading, risk management solutions, and fund management. Olam created the Relative Value Commodity Fund (the Ektimo RV Fund) in July 2010. Further fund strategies are scheduled for the coming years (Olam 2014).

Regarding price formation, global cotton prices are derived from the Cotlook A-index and cotton futures prices at the Intercontinental Exchange (ICE) in New York where the major cotton futures and options contracts are traded. Prices in physical cotton contracts vary because of differences in quality, location, delivery schedule, local supply and demand conditions and bargaining power. But these two international prices are used as a reference in physical trade, being the most important factors in the determination of the price of cotton. The Cotlook A-index is compiled daily by Cotton Outlook, a private company in Liverpool, by collecting quotations from cotton traders.<sup>5</sup> Cotton futures prices are established throughout the trading day based on trading activities at the ICE. ICE futures contracts are limited to the delivery of U.S. cotton to U.S. locations and, hence, reflect primarily U.S. conditions.<sup>6</sup> Despite substantial basis risk, they are used as a global benchmark. The two prices are highly correlated particularly as traders take into account ICE closing prices for their quotations. The correlation between the monthly returns of the Cotlook A-index and of the nearby ICE futures contract between 1999 and 2007 accounted for 85 per cent which increased to 91 per cent for the period 2008 to April 2015. An analysis of daily cotton prices shows that the magnitude of futures prices pass-through on the Cotlook A-index has increased indicating

<sup>4</sup> This trend is also visible with the arrival of Glencore Xstrata (although with small volumes), the world's largest commodity trader, to the relatively small cotton scene (Meyer 2010).

<sup>5</sup> It represents the average of the five lowest quotations of 19 types of cotton (Middling 1 -3/32”) from the following origins: Australia, Brazil, China, Francophone Africa, Greece, India, Mexico, Pakistan, Paraguay, Spain, Syria, Tanzania, Turkey, the US and Uzbekistan (Baffes 2002).

<sup>6</sup> To address this problem, after years of debates, world cotton futures are planned to be listed on the ICE (Meyer 2015). But it still has to be seen if these contracts will be widely traded and hence will have enough liquidity to be used as a reference in price setting and for risk management.

that prices quoted by international traders have become more responsive to daily changes in futures prices (Plastina 2009).

The rising importance of derivative markets – intertwined with the CotlookA-index – in cotton price setting is related to a policy shift with regard to the stabilization of export earnings in commodity exporting developing countries (Newman 2009). Interventions after the Second World War emphasized the stabilization of prices and export earnings through multilateral agreements such as buffer stocks and export quota in the context of ICAs and for cotton specifically national price stabilisation arrangements such as national commodity boards.<sup>7</sup> The period since the collapse of the ICAs has seen heavy promotion of private market-based risk management instruments, namely derivatives, particularly by the World Bank and other donors (World Bank 2011; Nissanke 2011).

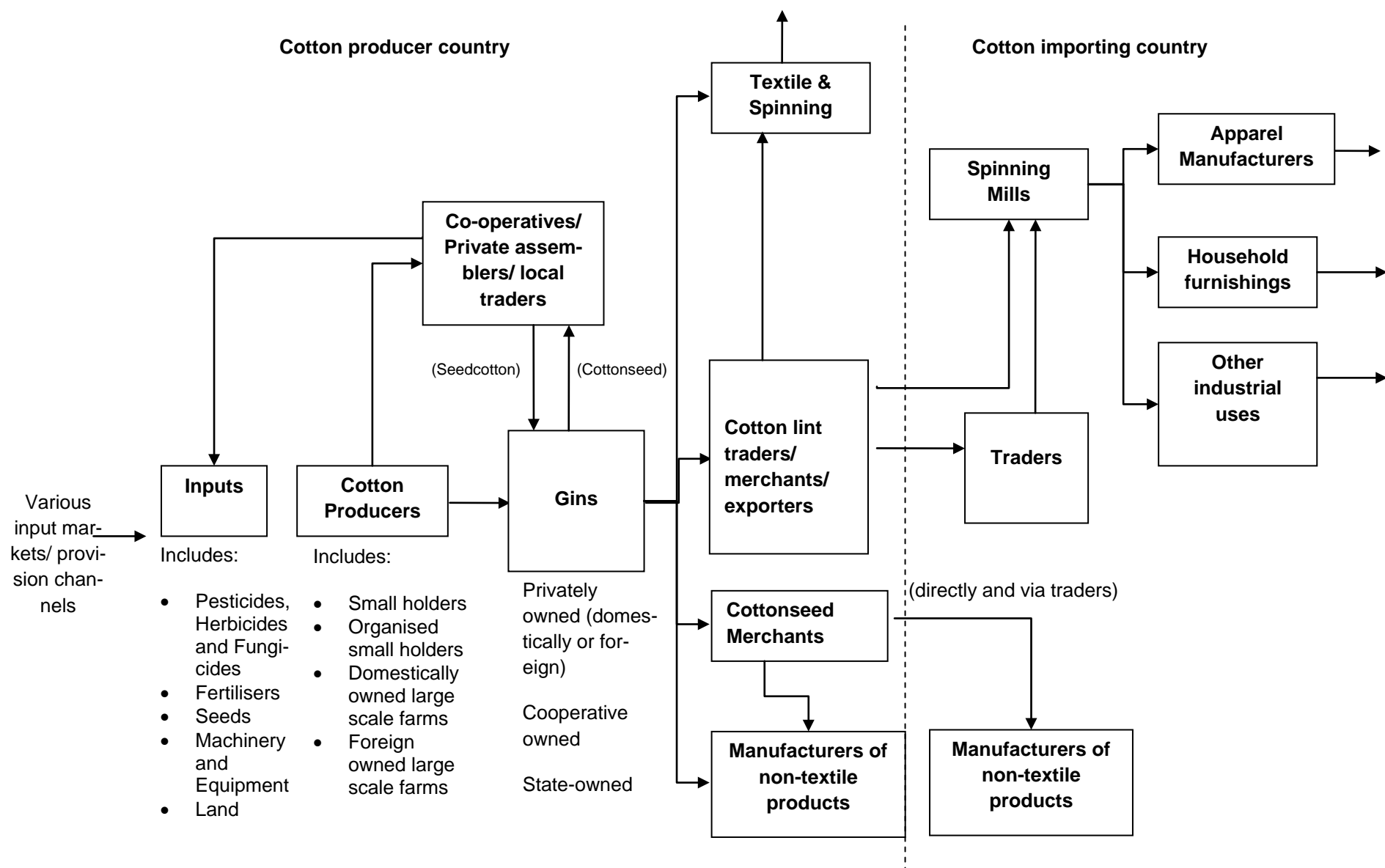
The importance of derivative markets in price setting is also related to international commodity traders' practices as the lead firms in cotton commodity chains (Figure 2) that handle the majority of internationally traded cotton (Larsen 2008; ITC 2013). International traders increasingly prefer using ICE futures prices (in contrast to the Cotlook A-index) as a reference as they use derivative markets for hedging. For hedging to be effective (by taking the opposite position to the physical position) physical prices have to reflect futures prices. This is done by either using fixed price forward or price to be fixed (PTBF) contracts<sup>8</sup> with reference to futures prices. Forwards require the immediate counter transaction on derivative markets while PTBF contracts only requires hedging after prices have been fixed and allows for more sophisticated and flexible risk management. Thus, the latter type of contract allows for the most effective combination of physical trade and hedging. These trading practices have bound together futures prices with national export and producer prices on the ground. Newman (2009) showed how the use of PTBF contracts together with hedging on derivatives markets opened up new possibilities for profitable hedging by international traders; the upshot being the transmission of price volatility to exporters in producer countries.

---

<sup>7</sup> Alongside, the Compensatory Financing Facility of the IMF and the STABEX scheme of the EC were put in place to ameliorate the adverse effects of commodity export instability (Newman 2009).

<sup>8</sup> For PTBF contracts, a basis is agreed with reference to an ICE futures trading month with the buyer (or seller) agreeing to a volume and delivery date with the price being fixed at a later time.

Figure 2: Schematic of global cotton chains



## 4. National Market Structures and Transmission of Prices and Risks

How price volatility is transmitted and how different actors operating at the various nodes of the cotton chain experience and negotiate prices depends critically on the national market structures in cotton producing countries. Hence, local marketing structures and price setting institutions and possibilities for PRM strategies both mediate the transmission of price risk and shift the distribution of rents along the chain. In the remainder of this paper, we present a comparative analysis of the ways in which global cotton prices are transmitted to local markets in relation to specific marketing structures and price setting institutions in the cotton sectors in Burkina Faso, Mozambique and Tanzania (Table 1) and distributional outcomes of this.

### 4.1. National market structures in Burkina Faso, Mozambique and Tanzania

The collapse of ICAs occurred concomitantly with the dismantling of national commodity marketing boards – remnants of colonial commodity marketing structures in SSA that were carried over to the post-independent era – under the auspices of structural adjustment. Cotton marketing boards acted as a monopsony for the purchase of seed cotton under centralised marketing systems. In most cases, they also had a monopoly in primary processing (ginning), marketing and the provision of inputs to farmers (Larsen 2008). Producer prices were set in advance of the planting season and farmers were guaranteed output markets and fixed prices. Market reform processes in the 1980s and 1990s generally entailed disengaging the state, facilitating greater involvement of the private sector and producer organizations, and ensuring greater competition in input and output markets. But this has taken place to varying degrees and there remains diversity in market organization across SSA as is evident from our three case studies (Delpeuch/Leblois 2011; Tschirley et al. 2008, 2009; Peltzer/Röttger 2013).

#### 4.1.1. Burkina Faso

Sofitex, the parastatal cotton company in Burkina Faso, operated historically with a monopsony in the purchase of seed cotton from farmers, an input supply-credit scheme and a system of fixed national producer prices (Bassett 2008). Low cotton prices in the 1980s and 1990s, together with high operating costs, resulted in growing farmers' indebtedness and prompted gradual reforms in the late 1990s and 2000s. These reforms included the establishment of producer groups (GPs), formation of a farmers union (UNPCB), scaling back of state control of Sofitex, partial privatisation of two regional monopolies, establishment of an association of cotton companies (APROCOB), and creation of an inter-professional committee (AICB) to coordinate sector stakeholders (Kaminski et al. 2011). In the second half of the 2000s the sector again experienced difficulties related to low cotton prices and the inflexible pricing mechanism which led to cotton companies incurring large losses (IMF 2014). In response, the producer price mechanism was adopted to better align domestic and world market prices. In addition, a new smoothing fund was established in 2007 (after a previous fund became insolvent) (Kaminski et al. 2009, 2011). The cotton sector today is organized through a concentrated regional concession system with strong state involvement in Sofitex<sup>9</sup> – which remains the largest of the three cotton companies in Burkina Faso, accounting for 80 per cent of cotton production. The remaining 20 per cent of production is channelled via Faso Coton and Socoma. The international traders Reinhart and Geocoton own shares of

<sup>9</sup> Sofitex is largely owned by the government (94.5 per cent) with the remaining shares by UNPCB (4.8 per cent) and limited shares by the international trader Gecoton (0.6 per cent) and local investors (0.1 per cent). Earlier, the government only owned 35 per cent, while 34 per cent were held by Dagris (now Geocoton), 30 per cent by UNPCB and 1 per cent by private local investors. In 2007 Dagris was unable to fulfill its part of the recapitalization, obliging the government to increase its stake to 65.4 per cent and, in 2012, further on to 95.50 per cent (IMF 2014). Socoma is owned by Geocoton (75 per cent), UNPCB (13 per cent) and private local investors (12 per cent). Faso Coton is owned by the international trader Paul Reinhart (29 per cent), International Promotion Services (21 per cent), the Burkina transportation company SOBA (20 per cent), the fertilizer company Amerfert (20 per cent) and UNPCB (10 per cent).



Fasocoton as well as Sofitex and Socoma respectively. There remains a single channel marketing system. The cotton company operating in each region has 'exclusive purchasing rights' of all cotton in that region. At the same time, cotton companies 'guarantee purchase' of all the cotton that farmers in that region want to sell. As common in such a contract system, cotton companies have to provide credit, inputs and extension services to farmers and are in charge of transport.

A fixed price is set before the season that is identical in all cotton growing areas and fixed throughout the season. The so-called pivot price is negotiated amongst stakeholders within the AICB at the beginning of the season in April on the basis of a formula that aims to align producer prices with global prices. This formula includes the three year average CotlookA-index and takes into account the conversion rate between seed cotton and cotton lint and standard processing costs (Goreux 2006; Bellù/Tortora 2010). Two unique features of the system in Burkina Faso are the two tier price system and the existence of a smoothing fund (fonds de lissage). In the two tier price system farmers are paid a floor price – 95 per cent of the pivot price less input costs received at the beginning of the season – on delivery of the seed cotton and a potential premium (ristourne) at the end of the season if the realized export price of cotton lint is above the floor price. The ex-post price of seed cotton is calculated using the average sales price during the season.<sup>10</sup> The smoothing fund – managed by a commercial bank – is aimed at reducing price risks for cotton companies.<sup>11</sup> The basic concept is that farmers are subsidized in years when world prices are low, and the fund is replenished in years when prices are high (Kaminski et al. 2011).

#### **4.1.2. Mozambique**

Since the early 20<sup>th</sup> century, the Mozambican cotton sector has been characterized by a concession system. Production is conducted by small holder farmers and, as in the last years of the colonial period, by large scale agriculture producers diversified across a number of commercial crops. Farmers were forced to plant cotton during the colonial period and production declined significantly after independence and nationalization of concession companies in 1975. Despite the ongoing civil war, the sector recovered in the late 1980s with the formation of public-private joint venture companies with exclusive cotton buying rights within specific concession areas. With regained political stability and economic reforms in the early 1990s, private companies were given new concessions which stimulated cotton production (Tschirley et al. 2008; Poulton et al. 2004). Today, the sector remains organized through a regional concession system involving private cotton companies only. As in Burkina Faso, cotton companies have a monopsony in their concession region. There are currently 11 private cotton companies active in the sector. Among the largest are three international traders: Plexus (the largest player), Olam (the third largest) and China Africa (the fifth largest), accounting for 38 per cent, 19 per cent and 8 per cent of production respectively. Large independent cotton companies include SANAM (nr. 2, 21 per cent) and SAN/JFS (nr. 4, 9 per cent).

The sector operates a national minimum price system for seed cotton. The minimum price is established by the government following a negotiated proposal by both the National Forum of Cotton Producers (FONPA) and the Mozambique Cotton Association (AAM) where cotton

<sup>10</sup> The formula was changed by AICB in 2011 to not include the actual world market price over the whole selling period (around 14 months) but exclude two month periods where cotton companies sold less than 1 per cent of national production to international traders. This led to the removal of some of the highest price months in 2010/11 when cotton prices reached its peak because cotton companies contracted to sell most of their cotton lint before the price surged. They would have occurred major losses if the price formula had not been adapted. This change led to major protests by farmers (Bloomberg 2011). A further critique is that the formula does not include actual sales prices but the Cotlook A-index which is in the case of Burkina Faso an under-representation of export prices, reducing the base for calculating producer prices (Bellù/Tortora 2010).

<sup>11</sup> Such funds were widespread in WCA but many experienced financial problems in the 1990s given the long period of low cotton prices and required re-financing (Dana/Sadler 2012). The French development agency AFD proposed that the EU should launch a pilot project for a new smoothing fund in Burkina Faso. The aim was to smooth prices but not to stabilize at an absolute level with prices negotiated based on a formula to align them with world-prices, and also with contributions to and support from the fund being determined by a formula to reduce political influence.

companies are represented. The proposed minimum price takes into account the mean of the Cotlook A-index in the previous month, the exchange rate, the quality differential of Mozambican cotton lint compared with the A-index, freight and insurance costs, the conversion rate between seed cotton and cotton lint, other levies and costs, and the share received by producers which varies from 50 to 55 per cent (IAM 2014). As the other variables are largely given, negotiations focus on the share going to farmers and cotton companies. The minimum price is set in April/May, between six weeks and two months in advance of cotton marketing. In 2007 the system was amended by an indicative price that was agreed upon by cotton companies and farmers in October/November, seven to eight months prior to purchasing and before planting. The intention of this indicative price is to assist farmers in planting decisions. However, the binding minimum price is only agreed in April/May and the indicative price is subject to change (Dias 2012). To date, there has not been a downward revision of the indicative price. In contrast to Burkina Faso, there is no binding supplementary payment if actual prices come to be higher than the minimum price; there is also no stabilisation fund.

#### **4.1.3. Tanzania**

The Tanzanian cotton sector was liberalized in 1993. Before this all cotton processing and domestic marketing was handled by cooperative unions and primary societies. The Tanzania Cotton Marketing Board (TCMB) handled all exports. In light of the sectors' inefficiencies, the Cotton Act of 1994 opened up cotton ginning and marketing to competition. Fixed producer prices were abolished and output and input markets were liberalised. Although the share of export prices received by farmers increased following reforms, liberalization resulted in the collapse of the credit and input supply system causing declines in both the level and quality of production (Larsen 2008; Gibbon 1999; Baffes 2004; Bargawi 2008). In view of the problems of input provision and quality, the state, via the Tanzania Cotton Board (TCB), renewed its engagement in the sector in the Cotton Act 2001 (Bargawi 2008). Today, the sector remains open to competition with no restrictions on farmers' and ginners' choice of trading partners. There are a large number of private companies active in purchasing, ginning, and selling, leading to considerable competition. Since liberalisation, there has been considerable entry and exit of private ginners while cooperative unions still make up the largest share of ginning capacity. More than 60 ginneries are registered with the TCB but only around 40 are active (in 2012/13). The top five account for only 40 per cent of total seed cotton purchase and they typically change from year to year (Tschirley et al. 2009; Salm et al. 2011). There is only one international trader involved in ginning (Olam, around 10 per cent of production) and few large players.

After liberalization, fixed prices were replaced by indicative prices that are not binding – although transactions below the indicative price would contravene the Cotton Act of 2001. TCB sets the indicative price for each season based on a stakeholder consultation process in May which involve the associations of cotton buyers (TCA) and farmers (TACOGA). In their price proposals, TACOGA considers production costs, TCA considers costs incurred in buying and processing of seed cotton, transportation and related taxes and levies while the TBC uses 60 per cent of the world market price (Ngaruko/Mbilinyi 2014). Indicative prices are announced before the opening of the official marketing season in June but can be revised subsequently. The price-setting group reconvenes as necessary to adjust the price in response to world-price fluctuations (Salm et al. 2011). For instance, in 2011, the indicative prices started at 1,100Tsh but declined to 800TSch per kilogram (Ngaruko/Mbilinyi 2014).<sup>12</sup>

<sup>12</sup> A new system is planned to be implemented where the government will refrain from setting indicative prices but will intervene through a Crop Price Stabilization Fund to support farmers that have problems repaying loans when prices fall below a certain level (Bariyo 2014).



**Table 1: Price setting in Burkina Faso, Mozambique and Tanzania**

	Burkina Faso	Mozambique	Tanzania
Administered price	yes (fixed price)	yes (minimum price)	no
Panterritorial & pan-seasonal price	yes	yes	no
Linked to global price	yes	yes	yes
Announced prior to planting	yes	yes (since 2007)	no
Announced/Adjusted prior to harvesting	no	yes but no downward revision yet	yes but subject to changes (indicative price)
Secondary payment after marketing	yes	no	no
Stabilisation fund	yes	no	no
How is price set?	Negotiated within interprofessional committee (government, cotton companies and farmers)	Negotiated between government, cotton companies and farmers	Competitive market price, indicative price negotiated between government, cotton companies and farmers

Source: Adapted from Tschirley et al. 2009.

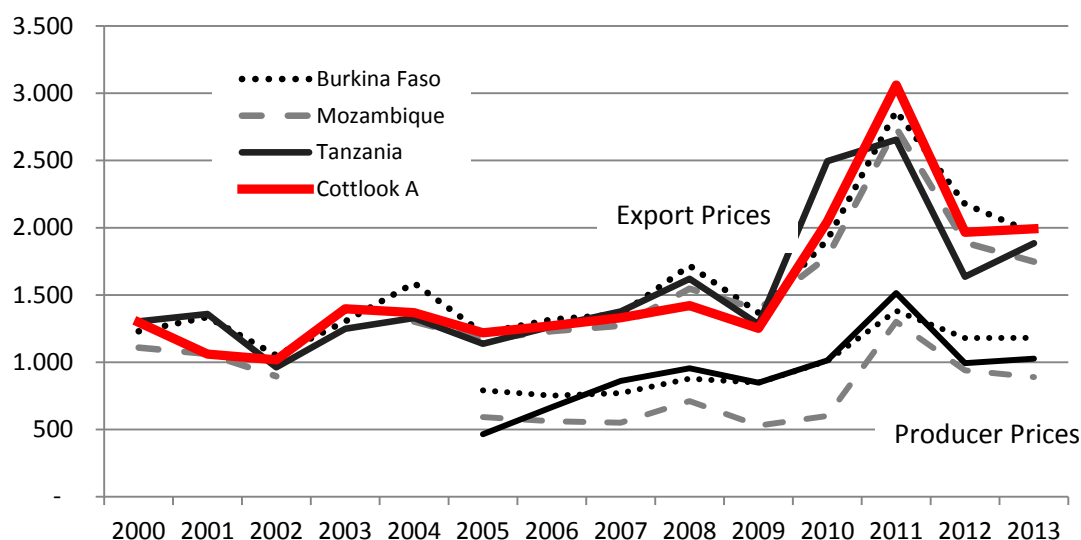
## 4.2. Inter- and intra-seasonal price volatility

The world price of cotton is transmitted to the three case study countries via the practices of price-setting discussed above. Whilst the Cotlook A-index remains as the key indicator informing the negotiated price via the various price-setting institutions, there has been a reorientation towards the ICE futures/New York market price owing to the centrality of futures prices as they are tied to the hedging strategies of international cotton traders. Hence, ICE futures have increasingly become the benchmark around which export prices are negotiated. Related to this, there have been discussions in Burkina Faso and Mozambique to adopt the ICE futures price in calculating the fixed/minimum producer price. The following quotes are indicative of the responses from our interviews conducted with actors along the Tanzanian marketing chain: 'New York is the benchmark on which to judge and decide upon prices' (international trader); 'The futures price is now by far the more important. It's what everybody looks at as a price guide' (local ginner); 'Everybody is looking at New York futures' (local agent). In this way, inter-seasonal variations in the world price are transmitted to each of the three case countries.

Figure 3 shows the evolution of the annual average export and producer prices in each of the three case countries together with the average A-index. During the period 2000–13, export prices followed the Cotlook A-index accounting on average for 105 per cent of the index in Burkina Faso, 101 per cent in Tanzania and 95 per cent in Mozambique. There are important differences in these countries that are largely related to quality considerations and also the bargaining position of cotton companies vis-à-vis international traders. But the important point is that yearly export prices follow the volatility of global prices. Correlation coefficients show this close relation between global and export prices accounting for 83 per cent in Tanzania and 90 per cent in Burkina Faso and Mozambique for the period 2005 to 2014. Yearly realized producer prices also follow global price dynamics. Correlation coefficients between producer prices and the A-index are around 0.7 in cases of Mozambique and Tanzania. The use of a three year average of the A-index in calculating producer prices smooths

the price received by producers in Burkina Faso<sup>13</sup> and we find a correlation index of 0.58. However, once the second payment is taken into account the coefficient increases to 0.87.<sup>14</sup>

**Figure 3: Cotlook A-index, export prices and producer prices (cotton lint price, US\$/tonne)**



Source: Cotlook A-index from Cotlook; Export prices from UN Comtrade; Producer prices from MAFAP, FAO (compared with national sources – UNPCB in Burkina Faso, TCB in Tanzania and IAM in Mozambique); Exchange rate from WDI.

Note: The export price value for 2003 is unrealistically low for Mozambique – hence, we excluded it from the analysis; A conversion factor from seed cotton to cotton lint of 0.42 was assumed for all countries; Marketing year based on season in Burkina Faso.

The share of farm gate prices<sup>15</sup> in the Cotlook A-index is however systematically lower in Mozambique over the period 2005 to 2013 than in Burkina Faso and Tanzania accounting on average for 44, 58 and 55 per cent respectively. Hence, both the fixed price system in Burkina Faso and the competitive system in Tanzania delivered producer prices that accounted for a higher share of the world and export price compared to Mozambique.<sup>16</sup> While the price system in Mozambique also secures a minimum producer price the share of the world price going to farmers is comparatively low as there is no secured post-seasonal premium paid to farmers and realised prices do not deviate greatly from minimum prices. An issue in all three systems is the concentration and market power of international traders and their close ties with cotton companies operating domestically in the context of increased vertical integration in the three countries<sup>17</sup>. The income share received by international traders is not considered in negotiations of fixed, minimum or indicative prices. The increased role of

<sup>13</sup> The smoothing effect in Burkina Faso declined however from using the seven to the five to currently the three year average Cotlook A-index.

<sup>14</sup> For the period 2005/06 to 2013/14, the realized producer price in Burkina Faso exceeded the floor price in five out of nine years due to positive export price developments during the season.

<sup>15</sup> For comparative reasons we convert national farm gate prices in US Dollars which eliminates exchange rate movements from the analysis. Shares are further calculated using the world average conversion factor of 0.42 from seed cotton to cotton lint. In reality these conversion factors are different given the different cost structures and productivity of ginners. Of course, such a simple inter-country price comparison is complicated, particularly given differences in production and transport cost structures, in taxes and levies and in ginning conversion factors in the countries in addition to exchange rate issues. But it still serves as an indicator of alignment between global and national prices in the three countries.

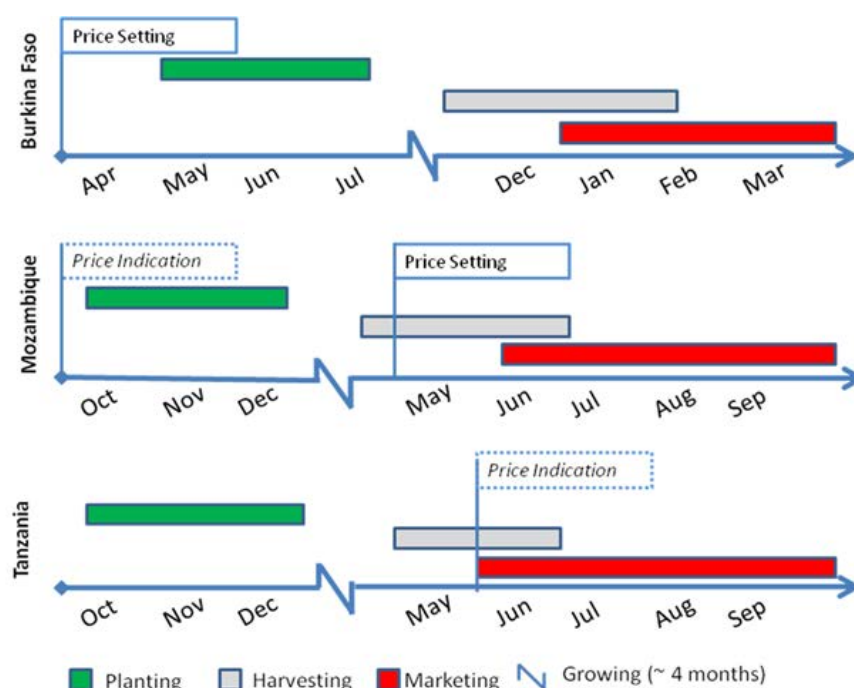
<sup>16</sup> This questions the competition-coordination trade-off (see f.e. Tschirley et al. 2009) as purchasing prices in fixed price systems are not generally lower in terms of farmers' share of world market prices than in the competitive system in Tanzania.

<sup>17</sup> Vertical integration has been a well-known phenomenon in WCA where some traders hold minority or majority shares in cotton companies due to the French heritage. In ESA, this emerged particularly in the last decade in order to secure supply (ICT 2013).

international traders at the ginning stage also questions whose interests are served in price negotiations between cotton companies and primary producers (Bellù/Tortora 2010).<sup>18</sup>

Differences exist across the three countries with respect to intra-seasonal price volatility. While minimum price systems operate in both, there are differences between Burkina Faso and Mozambique regarding the time of price fixation (Figure 4). In Burkina Faso, prices are fixed in advance of planting which helps to stabilize farmers' incomes by reducing uncertainty in planting decisions. In Mozambique, there are two price fixing meetings – one before the planting season and one before marketing starts where prices may be changed. Farmers are thus, in theory, exposed to changes in the world price that occur between the meetings.<sup>19</sup> By contrast, the nonbinding indicative price in Tanzania is announced at the start of the marketing period with the possibility of revision within the season. World price movements are thus transmitted to Tanzanian producers within a season and constitute a major concern for farmers. This is exemplified in the following quote: 'If NY goes up, you'll see the price goes up as well in the field. And if next day NY price goes down, you'll see the price going down later that day in the field' (local ginner). In addition to global price fluctuations, producer price movements in Tanzania exhibit a seasonal pattern. The price of seed cotton rises gradually throughout the season before dipping at the very end of the marketing period. This phenomenon has the effect of increasing inequality amongst farmers since only relatively financially secure farmers have the resources to wait and store cotton. Inequality in prices received also has a geographical dimension as the frequency of buyer visits and level of buyer competition varies widely between remote and more centrally located buying posts (Bargawi 2008).

**Figure 4: Timing of producer price setting in Burkina Faso, Mozambique and Tanzania**



Source: Own elaboration based on Mwinuka/Maro (2012) for Tanzania, ITFC-IDB (2014) for Burkina Faso, and Textile-in-depth (2009) for Mozambique; and World Cotton Calendar (ICAC 2015).

Note: In Tanzania cotton is produced in Western and Eastern zones with the former accounting for up to 99% of production. Dates are therefore only shown for the Western zones.

<sup>18</sup> Prices paid to affiliates may be set lower than those actually received on international markets by international traders, generating profits downstream by shifting losses upstream.

<sup>19</sup> In practice, there has been no downward revision of prices following the second meeting to date.

### 4.3. Who bears price risks and how are they managed?

Price risks can be differentiated into inter-seasonal and intra-seasonal price risks. The first is largely born by farmers in all three countries as producer prices closely follow world cotton prices through adoption of market-based producer price setting mechanisms in competitive system as well as in regulated systems where price formulas have increasingly been based on world-prices. Hence, in all three market structures, producers bear the brunt of inter-seasonal price instability. In Burkina Faso, there is a slight smoothing effect resulting from the pricing formula that takes into account world prices over the past three years. In the face of price uncertainty, diversification across crops is often the only coping strategy open to farmers. This is more effective in Burkina Faso compared with Mozambique and Tanzania as farmers know the guaranteed minimum price in advance of planting.

The extent to which different actors in the cotton system experience intra-seasonal price volatility depends upon the price-setting institutions and the existence of a stabilization fund.

Figure 5 describes different local actors' exposure to intra-seasonal price risks in the three countries. In Tanzania, farmers are exposed to world price volatility over the whole season although this is, in part, tempered by the system of indicative price setting at the start of the marketing season. Since cotton companies can pass on a portion of world price movements to producers, the price risk they face on this side of the transaction is limited. In Mozambique, intra-seasonal price variation between planting and marketing is formally born by farmers. Once marketing begins, the minimum price system effectively transfers the risks associated with world price movements to cotton companies. In Burkina Faso, price risks are born by the cotton companies over the whole season as prices are fixed before planting. The smoothing fund partly compensates cotton companies should prices decline during the season. Neither cotton companies nor farmers benefit in total from positive world price movements during the season since they must contribute a part to the fund to ensure a balanced budget in the long run. Ultimately, the burden of price risk falls on the government since it has a mandate to re-capitalise the fund should it be drawn down over an extended period of price decline, as occurred in 2007 (IMF 2014).

The PRM strategies employed by different actors along cotton chains depend, on the one hand, upon their exposure to world price movements, which are in turn conditioned by the institutional context and position along the chain, and on the other hand, their ability to undertake different PRM strategies. PRM strategies may be classified as physical or financial. Physical PRM strategies involve influencing the time of selling through storage, back-to-back trading that shortens the time that the actor has possession of cotton, and fixed price forward contracts.<sup>20</sup> Financial strategies involve hedging through futures and options on commodity derivative markets (Dana/Sadler 2012). Figure 5 also gives an overview on the ability of different local actors to mitigate intra-seasonal price risks in the three countries. In general, farmers have very limited access to PRM strategies. In the first place, storage and insurance costs are high and there is very limited access to affordable credit (Bargawi 2008). Only the wealthiest farmers are able to choose the time when they sell cotton. As the producer of cotton, farmers have no possibility of selling back-to-back. Nor are forward contracts typically available since, in all three countries, the cotton marketing season is fixed by government, and transactions conducted in cash. Hedging instruments are completely out of reach to farmers owing to the huge costs involved and the relatively large contract sizes.

Cotton companies bear the largest price risk over the season in Burkina Faso and Mozambique. The capacity of cotton companies to manage such price risks varies depending on their size and expertise but most importantly if they are affiliated to international traders. Shareholders of cotton companies include international traders such as Geocoton and Reinhart in Burkina Faso, Plexus, Olam and China Africa in Mozambique and Olam in Tanzania.

<sup>20</sup> There are also longer term strategies such as switching to niche and speciality product markets that are less affected by world-price instability and diversification through selling a larger variety of products or increasing local processing.

International traders generally hedge all or most of their trades on derivative markets through their headquarters which have specialized financial units. Independent local cotton companies do not engage in hedging as this is seen as too costly, risky and complex – even more so in the context of financialization – and requires access to information, financial resources and brokerage services.<sup>21</sup> Further, trading on derivative markets is not adapted to the contexts of local actors in producing countries – for instance are the volumes of local producers and exporters often very small compared to lot sizes in futures markets. Though changes such as electronic trading have reduced transaction costs, other costs of hedging, such as financial requirements and time needed to monitor market developments have increased. A particular problem is the increasing short-termism of trading and the related intra-day volatility of commodity prices which leads to more frequent and unpredictable margin calls requiring permanent access to finance. For actors that do not have financial units and the resources and capacities to interact actively with derivative markets and weather any losses associated with sudden adverse price changes, hedging has become an even more difficult risk management instrument. Even Sofitex, the largest state-owned cotton company in SSA, does not use futures or options as hedging is seen as complicated and expensive and not part of their business focus on the physical market.<sup>22</sup>

Independent local cotton companies – including large companies such as Sofitex in Burkina Faso, smaller private companies that dominate in Mozambique and Tanzania – are restricted to physical price risk strategies most importantly selling at different points in time through fixed-price-forward contracts. Forward sales lead to production risks as sales are often signed when actual production levels cannot be predicted which may lead to oversold situations. Hence, international traders only buy forward from ginneries if they are confident that volumes can be guaranteed (ITC 2013). This is the case for all three cotton companies in Burkina Faso and the majority of companies in Mozambique where forward sales are used extensively, both to manage price risks and as collateral for input credit provision. In Tanzania, larger ginners can also sell forward to international traders. But smaller independent ginners are generally not in a position to guarantee the volume and the quality of their production before it is ginned or store lint for extended periods. They primarily deal with price risks by trying to secure large margins and adjusting their buying price over the course of the season – a strategy they can pursue as there is no administered price and hence prices can be passed on to farmers – and selling the lint as it is ginned.

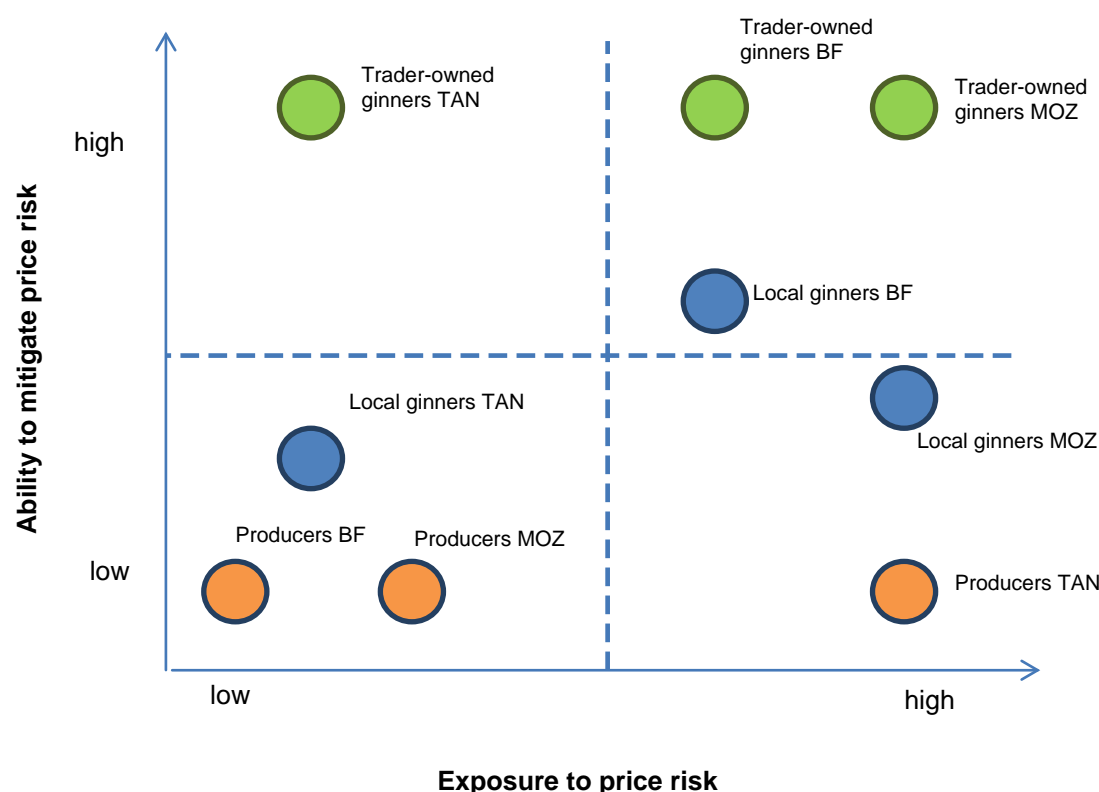
Hence, access to hedging gives multinational actors, i.e. international traders, and their local affiliates an important advantage in dealing with price risks relative to local actors in producing countries (Dana/Gilbert 2008). However, this impact goes beyond price security as commodity derivative markets are not only used for hedging but also speculatively. Particularly large multi-commodity international commodity traders, far from concerned with the increasing presence of financial investors on these markets, have made speculative derivatives trading an important part of their business strategy, opening expanded profit opportunities. By contrast, smaller, traditional cotton traders have largely remained focused on physical trading activities with limited expansion into financial services.

---

<sup>21</sup> High costs accrue not only for purchasing the contracts themselves but also for financing margin calls. Futures require margins that are adjusted on a daily basis to reflect market movements. Financing become necessary when oscillations in the current price fall outside the margin that is set below the original purchase price by the futures contract. Financing margin calls can be very expensive and requires permanent access to financial resources. A problem of options is that the premium is expensive compared to futures contracts (ITC2013).

<sup>22</sup> In Tanzania, the World Bank and CRDB promoted hedging through its “Kinga Ya Bei” project with very limited uptake (Newman 2009).

**Figure 5: Intra-seasonal price risk and PRM ability for farmers and cotton companies**



Source: Own elaboration.

## 5. Conclusions

Price instability is a major concern particularly for small holder farmers and for independent local cotton companies that have limited access to risk management strategies. Given the liberalization of price stabilization schemes in producer countries and international traders' practices, particularly the use of hedging, commodity derivative markets have become the central pricing mechanism for international cotton trade with futures prices being increasingly transferred along the commodity chain to exporters and producers. This is particular problematic given the increased short-termism in derivatives trading that amplifies both the size of price swings as well as their frequency.

The extent to which unstable world prices are transmitted to producers depends upon the national market structure, and price setting in particular. Inter-seasonal price instability is a reality in all countries studied since national prices are based on, and increasingly aligned to, global prices. This is the case under competitive price setting, as in Tanzania, as well as in administered price setting systems such as in Burkina Faso and Mozambique. Within seasonal price volatility is a greater concern for farmers in Tanzania than in Burkina Faso and Mozambique where this price risk is largely born by cotton companies. The latter two countries have different types of national producer price stabilization schemes in place that protect farmers from intra-seasonal price volatility and allow them to secure a certain degree of price security over the season. Burkina Faso further has a smoothing fund that mitigates price risks faced by cotton companies. In the liberalized system in Tanzania global price fluctuations within the season are also transmitted directly to producers.



Local actors have minimal possibilities to pursue market based PRM given the high costs and risks involved. Only ginner affiliates affiliated to international traders hedge most of their trades through their headquarters which have specialized financial units. Farmers have few alternative PRM options available other than adapting their production volumes from season to season. In Burkina Faso and Mozambique cotton companies can sell through fixed price forward contracts to international traders – a PRM option that smaller ginner affiliates in the fragmented and competitive system in Tanzania rarely have as they cannot guarantee volumes and quality to international traders.

Uneven exposure to price instability and access to PRM strategies have important distributional implications. Whilst international traders have the capacity to deal with price risks through hedging in addition to expanding their activities and profit possibilities through pursuing financial trading strategies and providing financial services on commodity derivative markets, local actors in producer countries face the challenge of price instability and increased short-termism with very limited access to risk management. Financialization has given rise to opportunities and challenges for actors in the cotton commodity chain and, given the heterogeneity of actors, has tended to exacerbate existing inequalities in cotton trading. Large international and financially adept actors stand to gain from opportunities for speculation alongside hedging activities on derivative markets while local actors in producer countries face greater challenges in an environment of price instability and short-termism (Newman 2009).

National market structures can mediate uneven exposure to price risk and risk management but only to a certain extent. National structures can address and mediate local relationships and power asymmetries in producer countries to a certain degree by negotiating how price risks are shared amongst actors operating in the national marketing system. The national institutional context, particularly tripartite negotiation structures and processes and strong independent farmers' unions or associations are crucial for outcomes that reflect farmers' interests. National structures alone however cannot fully address the major driver of intra-chain inequality in incomes and risks, namely, unequal power structures in global commodity chains – the dominance of international traders, in particular, and their increasing links to commodity derivative markets. Through acting on these markets they are in a position to determine prices along the cotton chain, to cope with price risks and to expand their financial activities and profit avenues.

In light of these conclusions policy reforms are necessary at least at four levels – regulation of commodity derivative markets to reduce the dominance of financial investors and financial motives (Staritz/Küblböck 2013); development of alternative physical price determination beyond commodity derivative markets and the highly intertwined and international trader-determined Cotlook A-index such as an adapted version of collective price agreements that were created by ICAs; establishment of national price stabilization schemes to ensure fair and stable prices in producer countries for exporters and farmers; and reduction of dependence on international traders through developing marketing and trading capacities in producer countries and through furthering local and regional processing. Current efforts by some international organizations to deal with price risks of farmers and exporters in producer countries through extending their access to hedging instruments is certainly not the policy answer. Commodity derivative markets are not an effective way to cope with commodity price risks for an important group of physical traders and particularly local actors in developing countries. Such efforts would intensify the impact of financialization on commodity chains and the uneven distributional implications discussed in this paper.

## References

- Baffes, J. (2004): Tanzania's Cotton Sector: Reforms, Constraints and Challenges. In: Development Policy Review, 22, 75-96.
- Baffes, J. (2002): Tanzania's Cotton Sector: Constraints and Challenges in a Global Africa Region. African Region Working Paper Series No 42. Washington D.C.
- Bargawi, H. (2008): Cotton Price Fluctuations at the Ground-level: Assessing the Difference in Impact in Rural Tanzania. NCCR Trade Working Paper No 2008/11. Bern.
- Bargawi, H./Newman, S. (2013): From futures markets to the farm-gate: Assessing real price transmission along coffee chains. ISS Working Paper No 577. The Hague.
- Bariyo, N. (2014): Tanzania Supports Cotton Farmers Amid Volatile Global Prices. In: Wall Street Journal, 11, July.
- Barrientos, S./Gereffi, G./Rossi, A. (2010): Economic and Social Upgrading in Global Production Networks: Developing a Framework for Analysis. Capturing the Gains Working Paper No 2010/3. Manchester.
- Bassett, T. (2008): Producing poverty: Power relations and price formation in the cotton commodity chains of West Africa. In: Moseley, W.G./Gray, L.C. (eds): Hanging by a Thread: Cotton, Natural Resources and Society in Sub-Saharan Africa. Ohio, 123-158.
- Baud, C./Durand, C. (2012): Financialization, globalization and the making of profits by leading retailers. In: Socio-Economic Review, 10, 241-266.
- Bellù, L.G./Tortora, P. (2010): Incentives – Disincentives in Transnational Value Chains. Report for FAO.  
[http://www.fao.org/docs/up/easypol/forum/92/92\\_Global%20value%20chains%20for%20MAFAP%20Methodology%2005-04-10.doc](http://www.fao.org/docs/up/easypol/forum/92/92_Global%20value%20chains%20for%20MAFAP%20Methodology%2005-04-10.doc) (30.06.2015).
- Bloomberg (2011): Burkina Faso Students Protest Deaths, Police, Rights Group Says.  
<http://www.bloomberg.com/news/articles/2011-03-09/burkina-faso-students-protest-deaths-police-rights-group-says> (30.06.2015).
- Cargill (2015): Our businesses (Cargill: Our Company).  
<http://www.cargill.com/company/businesses/index.jsp> (30.06.2015).
- Clapp, J. (2014): Financialization, Distance, and Global Food Politics. In: The Journal of Peasant Studies, 41(5), 797-814.
- Clapp, J./Helleiner, E. (2010): Troubled Futures. In: Review of International Political Economy, 19(2), 1-27.
- Coe, N.M./Lai, K.P.Y./Wójcik, D. (2014): Integrating Finance into Global Production Networks. In: Regional Studies, 48(5), 761-777.
- Dana, J./Gilbert, C.L. (2008): Managing agricultural price risk in developing countries. In: Geman, H. (ed.): Risk Management in Commodity Markets: From Shipping to Agriculturals and Energy, Chichester, 207-237.
- Dana, J./Sadler, M. (2012): Market-based approaches to managing commodity price risk. Washington, D.C.
- Delpuech, C./Leblois, A. (2011): Sub-Saharan African Cotton Policies in Retrospect'. CIRED Working Paper No. 28. Nogent sur Marne.
- Dias, P. (2012): Analysis of incentives and disincentives for cotton in Mozambique. Technical notes series, MAFAP. Rome.
- Domanski, D./Heath, A. (2007): Financial investors and commodity markets. In: BIS Quarterly Review, March 2007. Basel.



Ederer, S./Heumesser, C./Staritz, C. (2013): The role of fundamentals and financialization in recent commodity price developments – An empirical analysis for wheat, coffee, cotton, and oil. ÖFSE Working Paper 42. Vienna.

[http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP42\\_price\\_developments.pdf](http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP42_price_developments.pdf) (30.06.2015).

Epstein, G. A. (2005): Financialization and the World Economy. Cheltenham, UK/Northampton, M.A.

Fernandez, V. R. (2015): Global Value Chains in Global Political Networks: Tool for Development or Neoliberal Device? In: Review of Radical Political Economics, 47, 209-230.

Fine, B. (2013): Financialization from a Marxist perspective. In: International Journal of Political Economy, 42(4), 47-66.

Gereffi, G. (1995): Global Production Systems and Third World Development. In: Stallings, B. (ed.): Global Change, Regional Response. New York, 100-142.

Gereffi, G. (1994): The organization of Buyer Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks. In: Gereffi, G./Korzeniewicz, M. (eds): Commodity Chains and Global Capitalism. Westport, 95-122.

Gereffi, G./Humphrey, J./Kaplinsky, R./Sturgeon, T.J. (2001): Introduction: Globalisation, Value Chains and Development. In: IDS Bulletin, 32(3), 1-8.

Gibbon, P. (2014): Trading Houses during and since the Great Commodity Boom: Financialization, Productivization or...?. DIIS Working Paper No. 2014/12. Copenhagen.

Gibbon, P. (2002): At the cutting edge? Financialization and UK clothing retailers' global sourcing patterns and practices. In: Competition and Change, 6, 289-308.

Gibbon, P. (2001): Cooperative Cotton Marketing, Liberalization and 'Civil Society' in Tanzania. In: Journal of Agrarian Change, 1(3), 389-439.

Gibbon, P. (1999): Free Competition without Sustainable Development? Tanzanian Cotton Sector Liberalization, 1994/95 to 1997/98. In: Journal of Development Studies, 36, 128-150.

Gibbon, P./Ponte, S. (2005): Trading Down: Africa, Value Chains, and the Global Economy. Philadelphia.

Goreux, L. (2006): Cotton Price Smoothing Scheme of Burkina Faso. ICAC, Cotton Price Model. <https://www.icac.org/econ/Price-Model/Cotton-Price-Stabilization-Programs-and-Proposals> (30.06.2015).

Henderson, J./Dicken, P./Hess, M./Coe, N./Yeung, H.W.-C. (2002): Global production networks and the analysis of economic development. In: Review of International Political Economy, 9(3), 436-464.

Heumesser, C./Staritz, C. (2013): Financialization and the microstructure of commodity markets – A qualitative investigation of trading strategies of financial investors and commercial traders. ÖFSE Working Paper 44. Vienna.

[http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP44\\_financialisation.pdf](http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP44_financialisation.pdf) (30.06.2015).

IAM (2014): Mozambique Cotton Subsector. Unpublished internal presentation, Cotton Institute of Mozambique, Maputo, 13 November 2014.

ICAC (2015): World Cotton Calendar. <http://worldcottoncalendar.icac.org/> (30.06.2015).

ICAC (2014): Cotton: Review of the World Situation (Report by International Cotton Advisory Committee), 67(3), January-February 2014.

ICAC (2009): Structure of World Cotton Trade – December 2009. Report by International Cotton Advisory Committee.

[https://www.icac.org/cotton\\_info/publications/reviews/articles/structure\\_wct09.pdf](https://www.icac.org/cotton_info/publications/reviews/articles/structure_wct09.pdf) (30.06.2015).

IMF (2014): Burkina Faso, Selected Issues. Country Report no.14/230. Washington D.C.

ITC (2013): Improving Africa's Cotton Value Chain for Asian Markets. Technical Paper. Geneva.

ITFC-IDB (2014): Burkina Faso – Country Profile. [http://www.itfc-idb.org/sites/default/files/3-uv-007-country\\_profile.pdf](http://www.itfc-idb.org/sites/default/files/3-uv-007-country_profile.pdf) (30.06.2015).

Kaminski, J./Headey, D./Bernard, T. (2011): The Burkinabé Cotton Story 1992-2007: Sustainable Success or Sub-Saharan Mirage? In: World Development, 39(8), 1460-1475.

Kaminski, J./Headey, D./Bernard, T. (2009): Institutional reform in the Burkinabè cotton sector and its impacts on incomes and food security: 1996-2006. IFPRI Discussion Paper No 00920. Washington D.C.

Kaplinsky, R./Morris, M. (2001): A Handbook for Value Chain Research. Report prepared for International Development Research Center. Canada.

Lapavistas, C. (2014): Profiting without producing: how finance exploits us all. London.

Larsen, M. N. (2008): The Global Cotton Market and Cotton Sector Reforms in Sub-Saharan Africa. In: Fold, N./Larsen, M.N. (eds.): Globalization and Restructuring of African Commodity Flows. Uppsala, 156-183.

Lazonick, W./O'Sullivan, M. (2000): Maximizing shareholder value: a new ideology for corporate governance. In: Economy and society, 29(1), 13-35.

Louis Dreyfus (2015): Louis Dreyfus Holding B.V.: Overview. <http://www.louisdreyfus.com/about-us/overview/> (30.06.2015).

Maizels, A. (1992): Commodities in Crisis: the Commodity Crisis of the 1980s and the Political Economy of International Commodity Policies. Oxford.

Meyer, G. (2015): Global cotton futures contract clears hurdle, Financial Times, June 17, 2015. <http://www.ft.com/intl/cms/s/0/6eb7956a-150b-11e5-9509-00144feabdc0.html#axzz3jix3OiAU> (30.06.2015).

Meyer, G. (2010): Dreyfus-Olam in Focus as Cotton Traders Meet. In: Financial Times, September 29, 2010. <http://www.ft.com/intl/cms/s/0/ddff9afc-cbf1-11df-bd28-00144feab49a.html#axzz3bQxiGfo5> (28 May 2015).

Milberg, W. (2008): Shifting sources and uses of profits: sustaining US financialization with global value chains. In: Economy and Society, 37(3), 420-451.

Milberg, W./Winkler, D. (2010): Financialization and the dynamics of offshoring in the USA. In: Cambridge Journal of Economics, 34, 275-293.

Morgan, G. (2014): Financialization and the multinational corporation, Transfer. In: European Review of Labour and Research, 20(2), 183-197.

Morris, M./Kaplinsky, R./Kaplan, D. (2012): One Thing Leads to Another: Promoting Industrialisation by Making the Most of the Commodity Boom in Sub-Saharan Africa. <http://www.prism.uct.ac.za/Downloads/MMCP%20Book.pdf> (30.06.2015).

Mwinuka, L./Maro, F. (2013): Analysis of incentives and disincentives for cotton in the United Republic of Tanzania, Technical notes series MAFAP. Rome.

- Ngaruko, D.D./Mbilyi, D. (2014): Value Chain Analysis of the Cotton Market in Tanzania: Application of structure-Conduct-Performance (SCP) Model. In: *Journal of Developing Country Studies*, 15(4), 128-139.
- Newman, S. (2009): Financialization and Changes in the Social Relations along Commodity Chains: The Case of Coffee. In: *Review of Radical Political Economics*, 41(4), 539-559.
- Nissanke, M. (2011): Commodity markets and excess volatility: Sources and strategies to reduce adverse development implications. Paper prepared for the Common Fund for Commodities (CFC). [http://commonfund.org/uploads/tx\\_cfc/CFC\\_report\\_Nissanke\\_Volatility\\_Development\\_Impact\\_2010\\_02.pdf](http://commonfund.org/uploads/tx_cfc/CFC_report_Nissanke_Volatility_Development_Impact_2010_02.pdf) (30.06.2015).
- Olam (2014): Transcending Boundaries Annual Report 2014. <http://olamgroup.com/wp-content/uploads/2014/10/Olam-Annual-Report-2014.pdf> (30.06.2015).
- Oxfam (2011): Not A Game: Speculation vs Food Security. Oxfam Issue Briefing. Oxford.
- Palpacuer, F. (2008): Bringing the social context back in: governance and wealth distribution in global commodity chains. In: *Economy and Society*, 37, 393-419.
- Palpacuer, F./Gibbon, P./Thomsen, L. (2005): New challenges for developing country suppliers in global clothing chains: A comparative European perspective. In: *World Development*, 33(3), 409-430.
- Peltzer, R./Röttger, D. (2013): Cotton Sector Organisation Models and their Impact on Farmer's Productivity and Income. DIE Discussion Paper 4/2013. Bonn.
- Plastina, A. (2009): Cotton : Spot Prices Become more Responsive to Futures Prices. In: *Cotton: Review of the World Situation (International Cotton Advisory Committee)*, 63(1), 9-11.
- Poulton, C./Gibbon, P./Hanyani-Mlambo, B./Kydd, J./Maro, W./Larsen, M.N./Osorio, A./Tschirley, D./Zulu, B. (2004): Competition and Coordination in Liberalized African Cotton Market Systems. In: *World Development*, 32(3), 519-536.
- Salm, A./Dinsdale, P./MacDonald, D./Martelli, C./Hill, K./Kabissa, J. (2011): Tanzania Textiles and Garment Development Strategy. Interim Report for the Ministry of Industry and Trade, Tanzania.
- Sapsford, D./Pfaffenzer, S./Bloch, H. (2010): Commodities still in crisis? In: Nissanke, M./Mavrotas, G. (eds): *Commodities, Governance and Economic Development Under Globalization*. London, 99-115.
- Staritz, C./Küblböck, K. (2013): Re-regulation of commodity derivative markets – Critical assessment of current reform proposals in the EU and the US. ÖFSE Working Paper 45. Vienna. [http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP45\\_re-regulation.pdf](http://www.oefse.at/fileadmin/content/Downloads/Publikationen/Workingpaper/WP45_re-regulation.pdf) (30.06.2015).
- Textiles-In-depth (2009): Cotton Varieties and Cotton Harvesting. <http://www.textilesindepth.com/cotton-varieties/> (30.06.2015).
- Tschirley, D./Poulton, C./Boughton, D. (2008): The Many Paths of Cotton Sector Reform in Southern and Eastern Africa: Lessons from a Decade of Experience. In: Moseley, W.G./Gray, L.C. (eds.): *Hanging by a Thread: Cotton, Natural Resources and Society in Sub-Saharan Africa*. Ohio.
- Tschirley, D./Poulton, C./Labaste, P. (2009): 'Organization and performance of cotton sectors in Africa: Learning from Reform Experience'. Washington D.C.
- UNCTAD (2011): Price Formation in Financialized Commodity Markets. The role of Information. Study prepared by the secretariat of the UNCTAD for the Arbeiterkammer Wien. Geneva.

UNECA (2013): Making the Most of Africa's Commodities: Industrializing for Growth, Jobs and Economic Transformation: Economic Report on Africa. Addis Ababa.

Vander Stichele, M. (2012): Challenges for regulators: Financial players in the (food) commodity derivatives markets. SOMO Briefing Paper. Amsterdam.

Van der Zwan, N. (2014): Making sense of financialization. In: Socio-Economic Review, 12(1), 99-129.

World Bank (2011): World Bank group announces new instrument to help food producers and consumers in developing nations deal with volatile prices. Press Release No: 2011/559/EXT. Washington D.C.

Yeung, H.W-C./Coe, N.M. (2015): Towards a dynamic theory of global production networks. In: Economic Geography, 91(1), 29-58.

## Authors

### **Susan Newman**

is Senior Lecturer in Economics at the University of the West of England. She is also a Senior Research Associate in the Faculty of Economic and Financial Sciences at the University of Johannesburg. Prior to this she held positions at the International Institute of Social Studies and the University of the Witwatersrand. She holds a PhD in Economics from the School of Oriental and African Studies, University of London. Her research focuses on how finance intervenes in the organization of production.

### **Leonhard Plank**

is Senior Researcher at the Department of Spatial Planning of the Vienna University of Technology. He holds a doctorate in Business Administration of the University of Graz. His research focuses on economic and regional development, global value chains and production networks (in particular in the electronics and apparel sectors) as well as on the role of TNCs in the global economy. Prior, he was DOC-team fellow of the Austrian Academy of Sciences.

**Cornelia Staritz** is Senior Researcher at ÖFSE and Research Associate at Policy Research in International Services and Manufacturing (PRISM), University of Cape Town, South Africa. She holds Master degrees in Economics and Commerce and a Doctorate in Economics from the Vienna University of Economics and Business and a PhD in Economics from the New School for Social Research in New York. Her research focuses on economic development, international trade, global value chains and production networks, private sector development, and commodity-based development

**Bernhard Tröster** is an economist with specialization in international development as well as financial markets. Since January 2014, he has been researcher at ÖFSE with a focus on international trade and commodities & development. He also conducts Doctoral Studies in Social and Economics Sciences at the Vienna University of Economics and Business.

